

Re Point V

Substantiated Determination Regarding Novelty, Inventive Activity, and Industrial Applicability; Documents and Explanations in Support of this Determination

1. Document DE 4221185 A (D1) (see column 5, line 60 - column 6, line 18; Figures 1-11), which is regarded as the most proximate related art, discloses a method for producing and securing an apertured disk for a fuel injector for fuel-injection systems of internal combustion engines, the apertured disk having an opening contour that ensures complete passage of a fluid, having the following method steps:
 - a) making available a flat, metallic sheet having a constant thickness,
 - b) machining the sheet until an apertured disk having predefined outside dimensions is attained,

from which the subject matter of Method Claim 1 differs due to the following method steps:
 - c) reducing the thickness in one region of the sheet by impressing or embossing,
 - d) introducing at least one spray-discharge opening in the region having reduced thickness,
 - e) securing the apertured disk on a valve-seat member of the fuel injector in such a way that a lower end face of the valve-seat member overlaps an intake region of the apertured disk produced by the thickness reduction, such that the at least one spray-discharge opening is covered.

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- 1.1 Therefore, the objective to be achieved by the present invention can be seen in obtaining a cost-effective method for forming apertured disks and attaining improved fine atomization. This objective is achieved by the distinguishing features indicated above.
- 1.2 Using the method of the present invention, it is possible to reduce the thickness of the apertured disk by impressing or embossing, and to achieve an S-twist in the flow for improving the atomization of the fuel.
2. The subject matter of the dependent Claims 2-7 is regarded as novel and inventive, since these claims contain advantageous further refinements and improvements of the method indicated in Claim 1.
- 3 Claims 1-7 thereby satisfy the criterion indicated in Article 33(1) PCT.

Re Point VII

Certain Defects in the International Application

- 4 The independent Claim 1 is not drafted in the two-part form according to Rule 6.3 b) PCT. However, the two-part form appears to be suitable in the present case. Therefore, the features (document D1) known in conjunction with each other from the related art should be combined in the preamble (Rule 6.3 b) i) PCT), and the remaining features should be specified in the characterizing part (Rule 6.3 b) ii) PCT). However, if the applicant is of the opinion that the two-part form is not suitable, then the applicant should give reasons for this in its response letter. In addition, in the specification, the applicant should describe clearly what features of the subject matter of Claim 1 are already

known in conjunction with each other from document D1
(see PCT Guidelines, III-2.3a).

- 4.1 Incompatible with the requirements of Rule 5.1 a) ii)
PCT, neither the relevant related art disclosed in
document D1 nor this document are indicated in the
specification.
- 4.2 The specification is not in accord with the claims, as
stipulated by Rule 5.1 a) iii) PCT.